

WHAT IS CLAIMED IS:

1. A system for executing computing tasks in a preboot execution environment, comprising a language agent with a preboot execution language interpreter.

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2. The system of claim 1, wherein the preboot execution language interpreter is an object-oriented language interpreter.

3. The system of claim 1, further comprising at least one specification  
10 for performing at least one computing task in the preboot execution environment,  
wherein the language agent interprets the at least one specification for  
performing at least one computing task in the preboot execution environment, and  
performs the at least one computing task specified.

15 4. The system of claim 3, wherein the at least one specification is an  
encapsulation, encapsulating parameters resolved by the preboot execution  
language interpreter at execution time.

5. The system of claim 4, wherein the encapsulated parameters are  
20 parametric behaviors as well as parametric data.

6. A system for image installation in a preboot execution environment, comprising:

a language agent with a preboot execution language interpreter.

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7. The system of claim 6, wherein the preboot execution language interpreter is an object-oriented language interpreter.

8. The system of claim 6, further comprising:  
at least one specification for performing at least one task for image  
installation in the preboot execution environment,  
wherein the language agent interprets the at least one specification, and  
5 performs the at least one task specified.

9. The system of claim 8, wherein the at least one specification is an  
encapsulation, encapsulating parameters resolved by the preboot execution  
language interpreter at execution time.

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10. The system of claim 9, wherein the encapsulated parameters are  
parametric behaviors as well as parametric data.

11. The system of claim 9, wherein an image set for image installation  
15 itself is a self-describing encapsulation, containing the at least one specification as  
an encapsulation which encapsulates parameters resolved by the preboot  
execution language interpreter at execution time.

12. A system for remote imaging in a preboot execution environment,  
20 comprising:  
a language agent with a preboot execution language interpreter.

13. The system of claim 12, wherein the preboot execution language  
interpreter is an object-oriented language interpreter.

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14. The system of claim 12, further comprising:  
at least one specification for performing at least one task for remote  
imaging over a network in the preboot execution environment,

wherein the language agent interprets the at least one specification, and performs the at least one task specified.

15        15.     The system of claim 14, wherein the at least one specification is an encapsulation, encapsulating parameters resolved by the preboot execution language interpreter at execution time.

10        16.     The system of claim 15, wherein the encapsulated parameters are parametric behaviors as well as parametric data.

15        17.     The system of claim 15, wherein an image set for remote imaging itself is a self-describing encapsulation, containing the at least one specification as an encapsulation which encapsulates parameters resolved by the preboot execution language interpreter at execution time.

18.     A system for remote booting over a network, comprising:  
a language agent with a preboot execution language interpreter.

20        19.     The system of claim 18, wherein the preboot execution language interpreter is an object-oriented language interpreter.

25        20.     The system of claim 18, further comprising:  
at least one specification for performing at least one task in a preboot execution environment for remotely booting a computer over a network,  
wherein the language agent interprets the at least one specification, and performs the at least one task specified.

30        21.     The system of claim 20, wherein the at least one specification is an encapsulation, encapsulating parameters resolved by the preboot execution language interpreter at execution time.

22. The system of claim 21, wherein the encapsulated parameters are parametric behaviors as well as parametric data.

5           23. The system of claim 21, wherein an image set for remote booting itself is a self-describing encapsulation, containing the at least one specification as an encapsulation which encapsulates parameters resolved by the preboot execution language interpreter at execution time.

10           24. A method for executing computing tasks in a preboot execution environment, comprising the steps of:

          providing a language agent with a preboot execution language interpreter;  
          providing at least one specification for performing at least one computing task in the preboot execution environment;

15           interpreting by the language agent the at least one specification for performing at least one computing task in the preboot execution environment; and  
          performing the at least one computing task specified.

20           25. The method of claim 24, wherein the preboot execution language interpreter is an object-oriented language interpreter.

25           26. The method of claim 24, wherein the at least one specification is an encapsulation, encapsulating parameters resolved by the preboot execution language interpreter at execution time.

          27. The method of claim 26, wherein the encapsulated parameters are parametric behaviors as well as parametric data.

28. A method for image installation in a preboot execution environment, comprising the steps of:

providing a language agent with a preboot execution language interpreter;

providing at least one specification for performing at least one task for  
5 image installation in the preboot execution environment;

interpreting by the language agent the at least one specification for  
performing at least one task for image installation in the preboot execution  
environment; and

performing the at least one task for image installation specified.

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29. The method of claim 28, wherein the preboot execution language  
interpreter is an object-oriented language interpreter.

30. The method of claim 28, wherein the at least one specification is  
15 an encapsulation, encapsulating parameters resolved by the preboot execution  
language interpreter at execution time.

31. The method of claim 30, wherein the encapsulated parameters are  
parametric behaviors as well as parametric data.

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32. The method of claim 30, wherein an image set for image  
installation itself is a self-describing encapsulation, containing the at least one  
specification as an encapsulation which encapsulates parameters resolved by the  
preboot execution language interpreter at execution time.

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33. A method for remote imaging in a preboot execution environment,  
comprising the steps of:

providing a language agent with a preboot execution language interpreter;

providing at least one specification for performing at least one task for  
30 remote imaging in the preboot execution environment;

interpreting by the language agent the at least one specification for performing at least one task for remote imaging in the preboot execution environment; and

performing the at least one task for remote imaging specified.

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34. The method of claim 33, wherein the preboot execution language interpreter is an object-oriented language interpreter.

35. The method of claim 33, wherein the at least one specification is  
10 an encapsulation which encapsulates parameters resolved by the preboot execution language interpreter at execution time.

36. The method of claim 35, wherein the encapsulated parameters are parametric behaviors as well as parametric data.

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37. The method of claim 35, wherein an image set for remote imaging itself is a self-describing encapsulation, containing the at least one specification as an encapsulation which encapsulates parameters resolved by the preboot execution language interpreter at execution time.

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38. A method for remote booting in a preboot execution environment, comprising the steps of:

providing a language agent with a preboot execution language interpreter;

providing at least one specification for performing at least one task for  
25 remote booting in the preboot execution environment;

interpreting by the language agent the at least one specification for performing at least one task for remote booting in the preboot execution environment; and

performing the at least one task for remote booting specified.

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39. The method of claim 38, wherein the preboot execution language interpreter is an object-oriented language interpreter.

40. The method of claim 38, wherein the at least one specification is  
5 an encapsulation which encapsulates parameters resolved by the preboot execution language interpreter at execution time.

41. The method of claim 40, wherein the encapsulated parameters are parametric behaviors as well as parametric data.

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42. The method of claim 40, wherein an image set for remote booting itself is a self-describing encapsulation, containing the at least one specification as an encapsulation which encapsulates parameters resolved by the preboot execution language interpreter at execution time.

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43. A system for specifying computing tasks in a preboot execution environment, comprising a language agent with a preboot execution specification generator.

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44. The system of claim 43, further comprising a definition for at least one specification for performing at least one computing task in a preboot execution environment, wherein the at least one specification is generated from the definition by the language agent with a preboot execution specification generator.

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45. The system of claim 43, wherein the preboot execution specification generator is an object-oriented language code generator.

46. The system of claim 44, wherein the at least one specification is an  
30 encapsulation, encapsulating parameters resolved at execution time.

47. The system of claim 46, wherein the encapsulated parameters are parametric behaviors as well as parametric data.

5        48. A system for specifying tasks for image installation in a preboot execution environment, comprising a language agent with a preboot execution specification generator.

10        49. The system of claim 48, further comprising a definition for at least one specification for performing at least one task for image installation in a preboot execution environment, wherein the at least one specification is generated from the definition by the language agent with a preboot execution specification generator.

15        50. The system of claim 48, wherein the preboot execution specification generator is an object-oriented language code generator.

20        51. The system of claim 48, wherein the at least one specification is an encapsulation, encapsulating parameters resolved at execution time.

      52. The system of claim 51, wherein the encapsulated parameters are parametric behaviors as well as parametric data.

25        53. The system of claim 51, wherein the at least one specification which is an encapsulation is a part of an image set for image installation, which henceforth renders the image set itself to be a self-describing encapsulation, encapsulating parameters resolved at execution time.



54. A system for specifying remote imaging tasks in a preboot execution environment, comprising a language agent with a preboot execution specification generator.

5        55. The system of claim 54, further comprising a definition for at least one specification for performing at least one task for remote imaging in a preboot execution environment, wherein the at least one specification is generated from the definition by the language agent with a preboot execution specification generator.

10        56. The system of claim 54, wherein the preboot execution specification generator is an object-oriented language code generator.

15        57. The system of claim 54, wherein the at least one specification is an encapsulation, encapsulating parameters resolved at execution time.

58. The system of claim 57, wherein the encapsulated parameters are parametric behaviors as well as parametric data.

20        59. The system of claim 57, wherein the at least one specification which is an encapsulation is a part of an image set for remote imaging, which henceforth renders the image set itself to be a self-describing encapsulation, encapsulating parameters resolved at execution time.

25        60. A system for specifying remote booting tasks in a preboot execution environment, comprising a language agent with a preboot execution specification generator.

30        61. The system of claim 60, further comprising a definition for at least one specification for performing at least one task for remote booting in a preboot

execution environment, wherein the at least one specification is generated from the definition by the language agent with a preboot execution specification generator.

5           62. The system of claim 60, wherein the preboot execution specification generator is an object-oriented language code generator.

          63. The system of claim 60, wherein the at least one specification is an encapsulation, encapsulating parameters resolved at execution time.

10           64. The system of claim 63, wherein the encapsulated parameters are parametric behaviors as well as parametric data.

          65. The system of claim 63, wherein the at least one specification  
15 which is an encapsulation is a part of an image set for remote booting, which henceforth renders the image set itself to be a self-describing encapsulation, encapsulating parameters resolved at execution time.

          66. A method for specifying computing tasks in a preboot execution  
20 environment, comprising the steps of:

          providing a language agent with a preboot execution specification generator;

          providing at least one definition for at least one computing task in a preboot execution environment; and

25           generating a preboot execution specification from the at least one definition utilizing the language agent with a preboot execution specification generator.

          67. The method of claim 66, wherein the preboot execution  
30 specification generator is an object-oriented language code generator.

68. The method of claim 66, wherein the preboot execution specification is an encapsulation, encapsulating parameters resolved at execution time.

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69. The method of claim 68, wherein the encapsulated parameters are parametric behaviors as well as parametric data.

70. A method for specifying computing tasks for image installation in a preboot execution environment, comprising the steps of:

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providing a language agent with a preboot execution specification generator;

providing at least one definition for at least one computing task for image installation in a preboot execution environment; and

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generating a preboot execution specification from the at least one definition utilizing the language agent with a preboot execution specification generator.

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71. The method of claim 70, wherein the preboot execution specification generator is an object-oriented language code generator.

72. The method of claim 70, wherein the preboot execution specification is an encapsulation, encapsulating parameters resolved at execution time.

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73. The method of claim 72, wherein the encapsulated parameters are parametric behaviors as well as parametric data.

74. The method of claim 72, wherein the preboot execution specification, which is an encapsulation, is a part of an image set for image

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installation, which henceforth renders the image set itself to be a self-describing encapsulation, encapsulating parameters resolved at execution time.

75. A method for specifying remote imaging in a preboot execution  
5 environment, comprising the steps of:

providing a language agent with a preboot execution specification generator;

providing at least one definition for at least one computing task for remote  
imaging in a preboot execution environment; and

10 generating a preboot execution specification from the at least one  
definition utilizing the language agent with a preboot execution specification  
generator.

76. The method of claim 75, wherein the preboot execution  
15 specification generator is an object-oriented language code generator.

77. The method of claim 75, wherein the preboot execution  
specification is an encapsulation, encapsulating parameters resolved at execution  
time.

20 78. The method of claim 77, wherein the encapsulated parameters are  
parametric behaviors as well as parametric data.

79. The method of claim 77, wherein the preboot execution  
25 specification, which is an encapsulation, is itself a part of an image set for remote  
imaging, which henceforth renders the image set itself to be a self-describing  
encapsulation.

80. A method for specifying remote booting operations in a preboot  
30 execution environment, comprising the steps of:

providing a language agent with a preboot execution specification generator;

providing at least one definition for at least one computing task for remote booting in a preboot execution environment; and

- 5       generating a preboot execution specification from the at least one definition utilizing the language agent with a preboot execution specification generator.

81.    The method of claim 80, wherein the preboot execution  
10   specification generator is an object-oriented language code generator.

82.    The method of claim 80, wherein the preboot execution specification is an encapsulation, encapsulating parameters resolved at execution time.

15       83.    The method of claim 82, wherein the encapsulated parameters are parametric behaviors as well as parametric data.

84.    The method of claim 82, wherein the preboot execution  
20   specification, which is an encapsulation, is itself a part of an image set for remote booting, which henceforth renders the image set itself to be a self-describing encapsulation.

85.    A system for encapsulated platform imaging, comprising:  
25       a language agent with an encapsulated language interpreter for executing an encapsulation, wherein the encapsulation contains all instructions and data necessary to install an operating system onto a computing device.

86.    The system of claim 85, further comprising:

a logical connection, wherein the language agent with an encapsulated language interpreter and the encapsulation is provided over the logical connection.

5           87.    The system of claim 86, wherein the logical connection is a computer readable medium.

88.    The system of claim 87, further comprising:  
a bootable interface on the computer readable medium.

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89.    The system of claim 86, wherein the logical connection is a network connection.

90.    The system of claim 89, further comprising:  
15       a bootable interface on the network connection.

91.    The system of claim 90, wherein the bootable interface on the network connection is a Preboot Execution Environment (PXE) implementation.

20       92.    A method for encapsulated platform imaging, comprising the steps of:

providing an encapsulation which contains all instructions and data necessary to install an operating system onto a computing device;

25       providing a language agent with an encapsulated language interpreter for executing the encapsulation; and

executing the encapsulation to install the operating system onto the computing device.

93. The method of claim 92, wherein the encapsulation and the language interpreter are provided over a logical connection.

94. The method of claim 93, wherein the logical connection is a  
5 computer readable medium.

95. The method of claim 94, further comprising the steps of:  
providing a bootable interface on the computer readable medium.

10 96. The method of claim 95, further comprising the steps of:  
booting from the computer readable medium;  
loading the language agent with an encapsulated language interpreter for  
executing the encapsulation from the computer readable medium; and  
loading the encapsulation from the computer readable medium before  
15 executing the encapsulation.

97. The method of claim 93, wherein the logical connection is a  
network connection.

20 98. The method of claim 97, further comprising the steps of:  
providing a bootable interface on the network connection.

99. The method of claim 98, further comprising the steps of:  
booting over the network connection;  
25 loading the language agent with an encapsulated language interpreter for  
executing the encapsulation over the network connection; and  
loading the encapsulation over the network connection before executing  
the encapsulation.

100. The method of claim 98, wherein the bootable interface on the network connection is a Preboot Execution Environment (PXE) implementation.

101. A system for encapsulated platform imaging, comprising:  
5 a language agent with an encapsulation generator for defining and creating an encapsulation, wherein the encapsulation contains all instructions and data necessary to install an operating system onto a computing device.

102. A method for encapsulated platform imaging, comprising the steps  
10 of:  
providing a language agent with an encapsulation generator;  
providing a definition for an encapsulation; and  
generating from the definition an encapsulation containing all instructions and data necessary to install an operating system onto a computing device by  
15 utilizing the language agent with an encapsulation generator.

103. A system for executing computing tasks in a preboot execution environment, comprising the steps of:  
means for providing a language agent with a preboot execution language  
20 interpreter;  
means for providing at least one specification for performing at least one computing task in the preboot execution environment;  
means for interpreting by the language agent the at least one specification for performing at least one computing task in the preboot execution environment;  
25 and  
means for performing the at least one computing task specified.

104. A system for specifying computing tasks in a preboot execution environment, comprising:



means for providing a language agent with a preboot execution specification generator;

means for providing at least one definition for at least one computing task in a preboot execution environment; and

- 5 means for generating a preboot execution specification from the at least one definition utilizing the language agent with a preboot execution specification generator.